

REMARKS

The above Amendments and these Remarks are in reply to the Office Action mailed January 12, 2005.

Currently, claims 1-84 are pending. Applicants have amended claims 1, 4, 5, 9-11, 14, 16-19, 25, 26, 29-31, 34-36, 39-42, 48-50, 65, 71, and 80. Applicants respectfully request reconsideration of claims 1-84.

I. Summary of the Examiner's Objections

Claims 71-79 are rejected under 35 USC 101 because the claimed invention is directed to non-statutory subject matter.

Claims 71-79 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-5, 7-11, 15, 16, 26-30, 32-36, 39, 40, 50-54, 65-69, 71-74 and 80-83 are rejected under 35 USC 102(b) as being anticipated by *Kakimoto et al.* (5,522,683).

Claims 19-22 and 42-45 are rejected under 35 USC 103(a) as being unpatentable over *Kakimoto*.

Claims 6, 14, 25, 31, 48, 49, 62-64, 70, 79 and 84 are rejected under 35 USC 103(a) as being unpatentable over *Kakimoto* in view of *Olds* (5,741,096).

II. Remarks

Claim Objections

Claims 48 and 49 have been amended. It is respectfully submitted that the objections to claims 48 and 49 are now moot.

Double Patenting

The Examiner's position with respect to claims 33/39 and 34/40 is noted. As understood, no present objection or rejection exists. Should the Examiner make such a rejection, applicant will address the rejection at that time. Should the case be found otherwise allowable, the Examiner is invited to contact the undersigned attorney to discuss such rejection in order to advance prosecution of the application.

Rejections under 35 USC Section 101

Claim 71 has been amended to define:

one or more ~~processors~~ processing devices in communication with said one or more storage devices and said action component, said one or more ~~processors~~ processing devices including code instructing the devices to perform a method comprising the steps of:

It is respectfully submitted that the claim clearly addresses an apparatus and not, in the words of MPEP 2173(p) "both an apparatus and the method steps of using the apparatus". The steps performed by the processing device under the code instructing the device are not "method steps of using the tool", but are limitations construing physical requirements of the "code" as defined in the claims.

Merely because one component of the apparatus is adapted to perform a number of operations does not render the claim improper subject matter.

Reconsideration of the rejection under 35 USC Section 101 is therefore respectfully requested.

Rejections under 35 USC Sections 102 and 103.

Claims 1-5, 7-11, 15, 16, 26-30, 32-36, 39, 40, 50-54, 65-69, 71-74 are Not Anticipated.

Applicant respectfully asserts that the invention as defined in Claims 1-5, 7-11, 15, 16, 26-30, 32-36, 39, 40, 50-54, 65-69, 71-74 and 80-83 is not anticipated by *Kakimoto*. In particular, the claims have been amended to define a tool or method for operating a tool which is "adapted to

operate on a work piece along a line..." and includes "a first guide system providing a first guide line...", and further includes:

an action component adapted to operate on said work piece by following the guide line on the work piece,

a guide detector adapted to detect a position of said first guide line and provide first guide position data corresponding to said position of said first guide, and

a location detector in communication with said guide detector to receive said first guide position data, wherein said location detector is adapted to determine an orientation of said action component relative to said guide line, based at least in part on said first guide position data.

It is respectfully submitted that any guide detector or location detector disclosed in *Kakimoto* is not adapted to be relative to a "line". *Kakimoto* '683 is directed to an automated drilling system for printed circuit boards. *Kakimoto* distinguished itself by having illumination on the top and bottom so that marks on either side can be detected. It does not teach or anticipate the value of directing a tool along a path.

Kakimoto states:

The transmission image or reflection image is supplied to the camera unit 2, and the image signal is processed in the image processing apparatus. The binary image thus processed is enlarged and displayed on the monitor 4.

The image processing unit 3 searches for the binary image along the center of the cursor on the screen of the monitor 4 for detecting the center of the drilling mark 101. In the image processing unit 3, a threshold value is set to perform the discrimination between white and black areas. ... On the basis of the above threshold value, the binary image is searched both in the X and Y directions for obtaining the intersection between two vertical bisectors, each connecting two points in the X or Y direction where the gradation is changed. The intersection thus obtained is determined to be the center of the drilling mark 101.

The corrective distance from the center of the cursor which is calculated on the basis of the above-described detection is determined as an error between the center of the drilling mark 101 and the center of the drill 6. On the basis of the calculated value, the central processing unit 33 correctively moves the feed mechanism 7 such that the center of the drilling mark 101 conforms with the center of the drill 6. The drill 6 is then moved up by a solenoid 37 and an air cylinder 47, and it drills the printed board 100 at the center of the drilling mark 101. The detection of the center of the drilling

mark 101 is accurately and quickly performed by the image processing unit 3. Col. 6, lines 19-48.

In other words, *Kakimoto* teaches finding a point and moving a tool toward that point. It does not teach moving a workpiece to a line. Hence, *Kakimoto* fails to teach the claimed action component, guide detector and location detector working relative to a “guide line”.

Likewise claim 26 now defines:

an action component adapted to operate piece on said work piece relative to a guide line,

a guide detector adapted to detect a position of a first guide line and provide first guide position data corresponding to said position of said first guide line; and

a location detector in communication with said guide detector to receive said first guide position data, wherein said location detector is adapted to determine an orientation of said action component relative to said first guide line, based at least in part on said first guide position data.

Kakimoto fails to teach the claimed action component, guide detector and location detector working relative to a “guide line”.

Likewise Claim 50 now defines:

an action component adapted to operate on said work piece along a line,

a location detector adapted to determine an orientation of said component relative to the line, based at least in part on a position of a set of one or more guides lines, and provide orientation information corresponding to said orientation;

Kakimoto fails to teach the claimed action component and location detector working relative to a “line”.

Claim 65 now defines:

A method for identifying the orientation of a tool on a work piece, wherein said tool includes an action component for operating on said work piece along a line, said method including the steps of:

- (a) detecting position data for one or more guides guide lines;
- (b) determining an orientation of said tool relative to said line based at least in part on said position data detected in said step (a); and

(c) adjusting said tool in response to said orientation determined in said step (b).

Kakimoto fails to teach the claimed detecting and determining steps working relative to a “line”.

Claim 71 now defines:

A tool adapted to operate on a work piece, said tool comprising:
an action component adapted to operate on said work piece along a line;
one or more storage devices; and
one or more ~~processors~~ processing devices in communication with said one or more storage devices and said action component, said one or more ~~processors~~ processing devices including code instructing the devices to perform a method comprising the steps of:

(a) determining an orientation of said tool based at least in part on a position of a set of one or more guides lines; and

(b) adjusting said tool in response to said orientation determined in said step (ea).

Kakimoto fails to teach the claimed action component and one or more processing devices working relative to a “line” or “set of one or more guide lines”.

Claim 80 now defines:

A tool adapted to operate on a work piece along a line, said tool comprising:
means for detecting position data for one or more ~~guides~~ guide lines;
means for determining an orientation of said tool based at least in part on said position data; and
means for adjusting said tool relative to said guide lines in response to said orientation determined by said means for determining.

Kakimoto fails to teach the claimed action component and one or more processing devices working relative to a “line” or “set of one or more guide lines”. As noted in MPEP Section 2181:

The USPTO must apply 35 U.S.C. 112, sixth paragraph in appropriate cases, and give claims their broadest reasonable interpretation, *in light of and consistent*

with the written description of the invention in the application. See Donaldson, 16 F.3d at 1194, 29 USPQ2d at 1850 (stating that 35 U.S.C. 112, sixth paragraph "merely sets a limit on how broadly the PTO may construe means-plus-function language under the rubric of reasonable interpretation.' ").

It is respectfully asserted that under the broadest possible interpretation allowed under Donaldson, there is no teaching of the claimed means in the present invention.

Since *Kakimoto* does not teach each and every limitation of the present invention as defined in claims 1, 26, 50, 65, 71 and 80, it is respectfully submitted claims 1-5, 7-11, 15, 16, 26-30, 32-36, 39, 40, 50-54, 65-69, 71-74 and 80-83 are not anticipated by *Kakimoto*.

Claims 19-22 and 42-45 are not obvious under 35 USC 103(a)

It is respectfully submitted that claims 19-22 and 42-45 are not obvious 35 USC 103(a). Each of the above claims depends from an independent claim set forth above.

Initially, it is noted that the Examiner has failed to set forth a *prima facie* obviousness rejection. As recently stated by the Federal Circuit:

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a *prima facie* case of obviousness based upon the prior art.... '[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.' The patent applicant may then attack the Examiner's *prima facie* determination as improperly made out, or the applicant may present objective evidence tending to support a conclusion of nonobviousness." *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992).

The Examiner merely conclusory statement states that "it would have been obvious to one of ordinary skill in the art to use more than one guide...". No art is cited for this proposition. Rather, the examiner states that the reason it would have been obvious is because "[i]ncreasing the number of reference points ... minimized the orientation error.

Such statement is merely conclusory and without support. In rejecting claims under 35 U.S.C. §103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness.

A *prima facie* case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art. *In re Rijckaert*, 28 USPQ2d at 1956.

It is respectfully submitted that the Examiner has not met the burden of providing a proper rejection.

Even if the rejection is proper, the second guide is not obvious. Nothing in the *Kakimoto* reference teaches the claimed “guide line” operation as now defined in the claims. Reconsideration of claims 19 – 22 and 42 – 45 is therefore requested.

Claims 6, 14, 25, 31, 48, 49, 62-64, 70, 79 and 84 are not obvious over *Kakimoto* in view of *Olds*.

It is further respectfully submitted Claims 6, 14, 25, 31, 48, 49, 62-64, 70, 79 and 84 are not obvious over *Kakimoto* in view of *Olds* (5,741,096).

Again, nothing in the *Kakimoto* reference teaches the claimed “guide line” operation as now defined in the claims. Reconsideration of claim 6, 14, 25, 31, 48, 49, 62-64, 70, 79 and 84 is therefore requested.

Based on the above amendments and these remarks, reconsideration of claims 1-84 is respectfully requested.


The Examiner’s prompt attention to this matter is greatly appreciated. Should further questions remain, the Examiner is invited to contact the undersigned attorney by telephone.

Enclosed is a PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. § 1.136 for extending the time to respond up to and including today, May 11, 2005.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 501826 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

Date: 5-11-05

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